Name: Date:
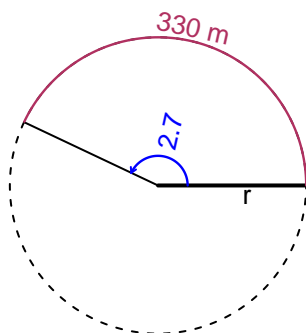_____   _____

Trig Final (Practice v7)

- You should have a calculator (like Desmos) and a unit-circle reference sheet.

Question 1

In the figure below, we see a circle and a central angle that subtends an arc. The arc length is 330 meters. The angle measure is 2.7 radians. How long is the radius in meters?
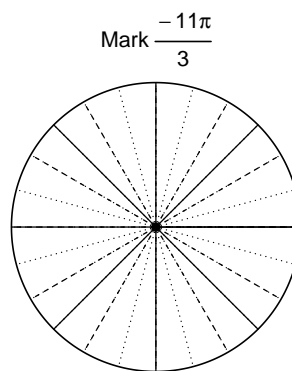

Question 2

Consider angles $\frac{9\pi}{4}$ and $\frac{-11\pi}{3}$. For each angle, use a spiral with an arrow head to **mark** the angle on a circle below in standard position. Then, find **exact** expressions for $\cos\left(\frac{9\pi}{4}\right)$ and $\sin\left(\frac{-11\pi}{3}\right)$ by using a unit circle (provided separately).

Mark $\frac{9\pi}{4}$

Find cos(9π/4)

Mark $\frac{-11\pi}{3}$
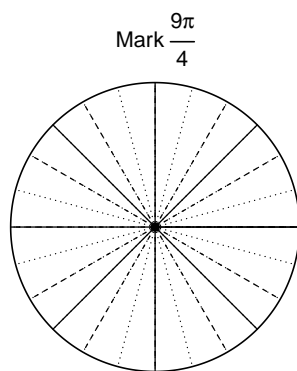
Find sin(−11π/3)

Question 3

If $\cos(\theta) = \frac{-11}{61}$, and θ is in quadrant III, determine an exact value for $\sin(\theta)$.

Question 4

A mass-spring system oscillates vertically with a midline at $y = 6.76$ meters, a frequency of 4.54 Hz, and an amplitude of 8.8 meters. At $t = 0$, the mass is at the midline and moving down. Write an equation to model the height (y in meters) as a function of time (t in seconds).